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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/787,748	03/21/2001	James M. Evans	3847-67823	4685

7590 06/15/2004

Barnes & Thornburg
11 South Meridian Street
Indianapolis, IN 46204

EXAMINER

MORILLO, JANELLE COMBS

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 06/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/787,748

Applicant(s)

EVANS ET AL.

Examiner

Janelle Combs-Morillo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-14 and 19-32 is/are pending in the application.
- 4a) Of the above claim(s) 1, 5, 7-11 and 21-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-4, 12-14, 19 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fang et al (US 5,667,602A) in view of Evans (US 5,573,606).

Fang teaches an Al-Mg alloy comprising (in weight%): 2-5% Mg, up to 0.3% Si, 0.2-1.6% Mn, up to 0.6% Fe, balance aluminum (see column 5 lines 10-18), which overlaps the presently claimed composition ranges (claims 2 and 3). Fang also teaches that said alloy is suitable for die casting, and achieves elongations values of typically 17% (see table 2) and $YS > 17$ ksi (> 11.95 kgf/mm², column 3 lines 24-25). Fang does not mention Cu, and therefore is held to teach substantially zero, which falls within the presently claimed range (claim 4). Fang does not teach the presence of Be in said alloy.

However, Evans teaches that the addition of less than 0.003% Be is useful for preventing the oxidation of magnesium in Al-Mg alloys (column 2 line 47 to column 3 line 8). It would have been obvious to one of ordinary skill in the art to add Be to the Al-Mg alloy of Fang because Evans teaches the addition of less than 0.003% Be is useful for preventing the oxidation of magnesium in Al-Mg alloys (column 2 line 47 to column 3 line 8).

Overlapping ranges have been held to be a prima facie case of obviousness, see MPEP § 2144.05. It would have been obvious to one of ordinary skill in the art to select any portion of the

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range, including the claimed range, from the broader range disclosed in the prior art, because the prior art finds that said composition in the entire disclosed range has a suitable utility.

3. Claims 12, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fang et al (US 5,667,602A).

Fang teaches an Al-Mg alloy comprising (in weight%): 2-5% Mg, up to 0.3% Si, 0.2-1.6% Mn, up to 0.6% Fe, balance aluminum (see column 5 lines 10-18), which overlaps the presently claimed composition ranges (claims. Fang also teaches that said alloy is suitable for die casting, and achieves elongations values of typically 17% (see table 2) and YS>17 ksi (>11.95 kgf/mm², column 3 lines 24-25). Fang does not mention Cu or Be, and therefore is held to teach substantially zero, which falls within the presently claimed ranges. Fang does not teach 18% elongation, but the examiner asserts that 17% elongation, taught by Fang at Table 2, is a close approximation of the presently claimed "greater than or equal to 18%".

Overlapping ranges have been held to be a prima facie case of obviousness, see MPEP § 2144.05. It would have been obvious to one of ordinary skill in the art to select any portion of the range, including the claimed range, from the broader range disclosed in the prior art, because the prior art finds that said composition in the entire disclosed range has a suitable utility.

4. Claims 13 and 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Fang et al (US 5,667,602A) as applied to claims above, in view of "Aluminum and Aluminum Alloys" pp 88-90.

Fang does not teach 0.05-0.10% Cu in said Al-Mg alloy. However, as seen in "Aluminum and Aluminum Alloys" p 90, substantially similar Al-Mg 5xx series casting alloys typically have 0.15% max. Cu. "Aluminum and Aluminum Alloys" teaches at the 3rd column of page 90 that Cu

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additions to casting alloys “generally reduces resistance to general corrosion”. It would have been obvious to one of ordinary skill in the art to include 0.15% max. Cu, as taught by “Aluminum and Aluminum Alloys”, in the 5xx series Al-Mg casting alloy taught by Fang, because “Aluminum and Aluminum Alloys” teaches at the 3rd column of page 90 that Cu additions to casting alloys “generally reduces resistance to general corrosion”.

Concerning claim 14, Fang does not mention Zn and therefore is held to be substantially zero, which overlaps the presently claimed range.

Response to Amendment/Arguments

5. In the response filed on March 26, 2004, applicant amended claims 12 and 19, and submitted various arguments traversing the rejections of record.

6. Applicant’s argument that the present invention is allowable over the prior art of record because Evans does not teach an overlapping alloy composition has not been found persuasive. Evans is used to teach that it is common in the art of foundry Al-Mg 5xx casting alloys to add less than 0.003% Be to reduce oxidation. The examiner points out that “Aluminum and Aluminum Alloys” also teaches that it is known in the art to add Be to Al-Mg casting alloys in order to reduce oxidation (see pages 88-89). The examiner disagrees that given the references of Fang et al and Evans et al. one skilled in the art would be lead away from the instant invention, because of the fact that it is well known that Be is a typical oxidation reduction additive to Al-Mg casting alloys (see “Aluminum and Aluminum Alloys” pages 88-89).

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Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Combs- Morillo whose telephone number is (703) 308-4757. The examiner can normally be reached Monday through Friday from 8:30am to 6:00pm.

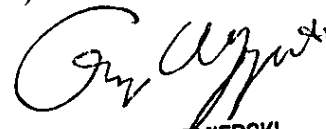
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached on (703) 308-1146. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

jcm



June 8, 2004


GEORGE WYSZOMIERSKI
PRIMARY EXAMINER